



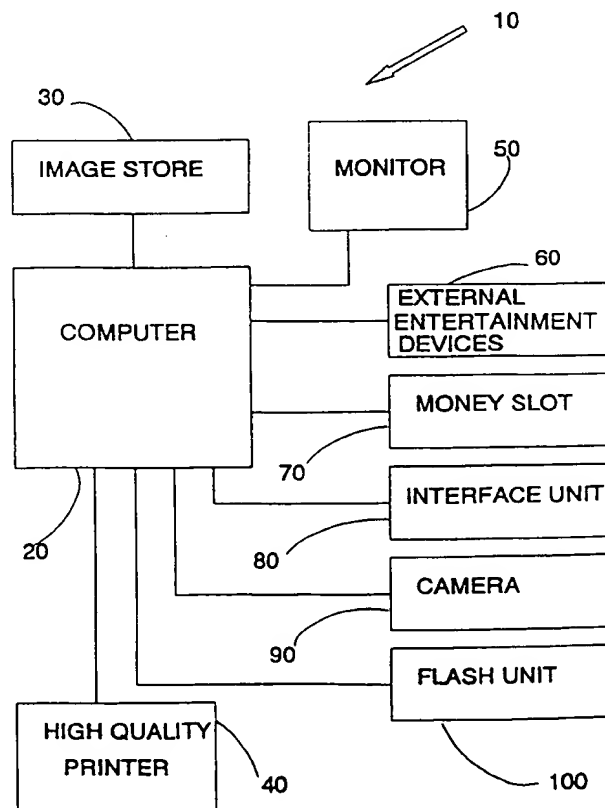
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(54) Title: CAMERA SYSTEM WITH FLASH ILLUMINATION AND CHROMA-KEYING

(57) Abstract

A camera system for generating a composite image of a subject superimposed on a background image, the system comprising: (a) a flash apparatus (100) operable to flash illuminate the subject; (b) image capture apparatus (90) for capturing a flash-illuminated image and a non-flash-illuminated image of the subject in front of a chromakey screen; (c) a matte generator for generating a matte from the non-flash-illuminated image; and (d) a chromakey image combiner for combining the background image with the flash-illuminated image in accordance with the matte to generate the composite image.



CLAIMS

1. A camera system for generating a composite image of a subject superimposed on a background image, the system comprising:

- (a) flash apparatus operable to flash illuminate the subject;
- (b) image capture apparatus for capturing a flash-illuminated image and a non-flash-illuminated image of the subject in front of a chromakey screen;
- (c) a matte generator for generating a matte from the non-flash-illuminated image; and
- (d) a chromakey image combiner for combining the background image with the flash-illuminated image in accordance with the matte to generate the composite image.

2. A camera system according to claim 1, wherein the image capture apparatus is a video camera operable to capture successive video images.

3. A camera system according to claim 1, wherein the image capture apparatus is an asynchronous image capture device operable to capture images asynchronously.

4. A camera system according to any of claims 1 to 3, wherein the matte is generated from a non-flash-illuminated image captured before the flash-illuminated image is captured.

5. A camera system according to any of claims 1 to 3, wherein the matte is generated from a non-flash-illuminated image captured after the flash-illuminated image is captured.

6. A camera system according to any of claims 1 to 5, comprising a display for displaying a trial view image of the subject in front of the chromakey screen, the trial view being generated from a non-flash-illuminated image superimposed on a background image using a matte generated from that or another non-flash-illuminated image.

7. A camera system according to claim 2 and claim 6, wherein the matte generator is operable to generate respective mattes from each of the successive images captured by the image capture apparatus.

5 8. A camera system according to claim 7, comprising a matte store for storing at least a most recently generated matte.

9. A camera system according to claim 8, comprising matte generator control logic for controlling the matte generator to cease generating mattes prior to the capture
10 of a flash-illuminated image.

10. A camera system according to claim 4 and claim 7, comprising a delay circuit for delaying mattes generated by the matte generator so that the composite image is derived using a current flash-illuminated image and a delayed matte generated from
15 a previous, non-flash-illuminated image.

11. A camera system according to any preceding claim, wherein the chromakey screen is backlit.

20 12. A camera system according to any preceding claim, comprising:
an image store for storing one or more background images; and
a user operable background controller for selecting a background image for use in the composite image.

25 13. A camera system according to claim 12, wherein the image store comprises a hard disk data storage device.

14. A camera system according to claim 12, wherein the image store comprises a CD-ROM data storage device.

30 15. A camera system according to any preceding claim, comprising control logic for controlling the gain of the image capture apparatus to be lower for the capture of

the flash-illuminated image than for the capture of the non-flash-illuminated image.

5 16. A camera system according to any one of claims 1 to 14, comprising control logic for controlling the exposure of the image capture apparatus to be lower for the capture of the flash-illuminated image than for the capture of the non-flash-illuminated image.

10 17. A camera system according to any preceding claim, comprising a printer for printing the composite image.

18. A camera system according to any preceding claim, wherein the matte generator and chromakey image combiner are provided on a PC peripheral card.

15 19. A method of generating a composite image of a subject superimposed on a background image, the method comprising the steps of:

- (a) capturing a flash-illuminated image and a non-flash-illuminated image of the subject in front of a chromakey screen;
- (b) generating a matte from the non-flash-illuminated image; and
- (c) chromakey-combining the background image with the flash-illuminated image
20 in accordance with the matte to generate the composite image.

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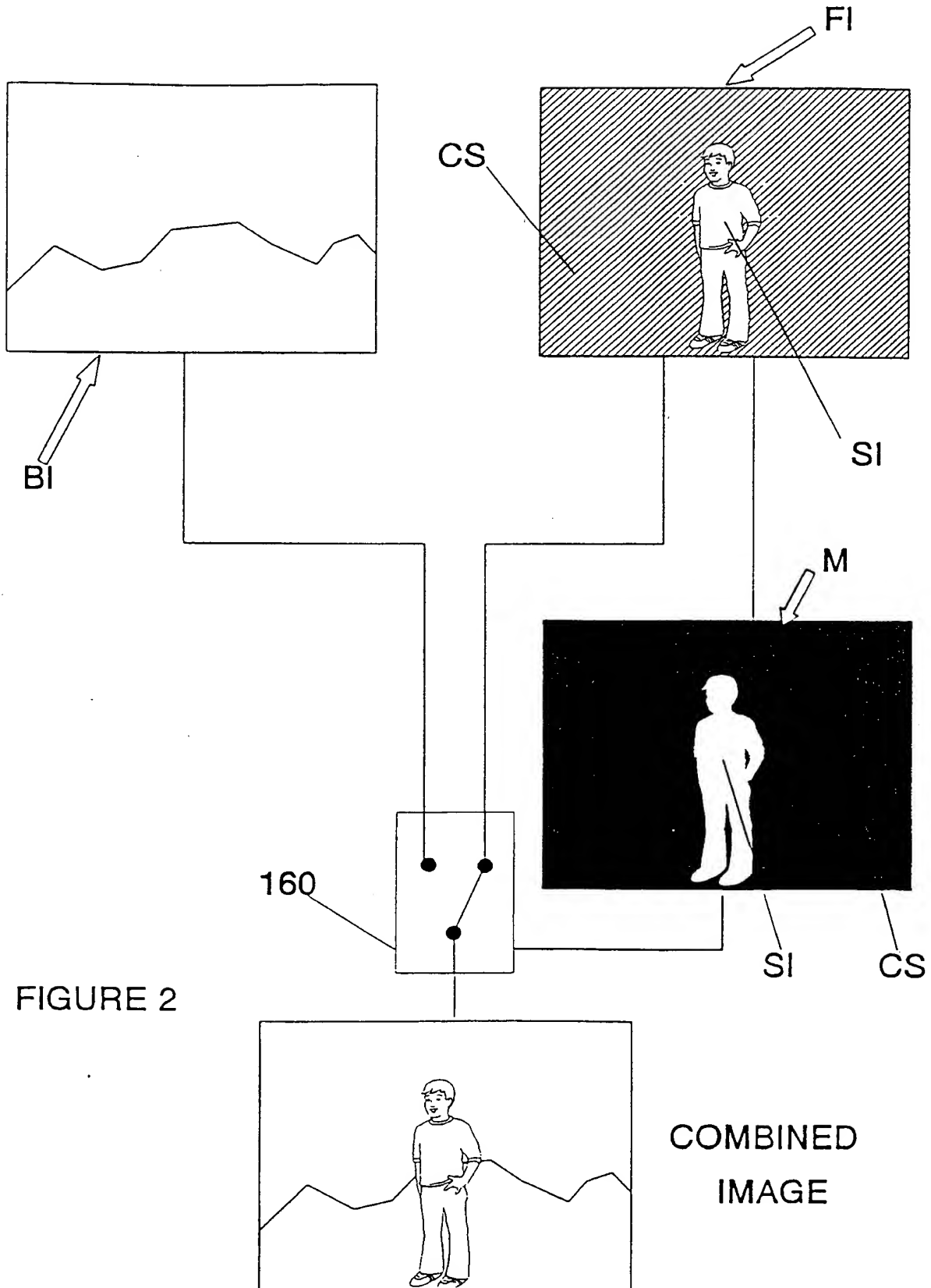
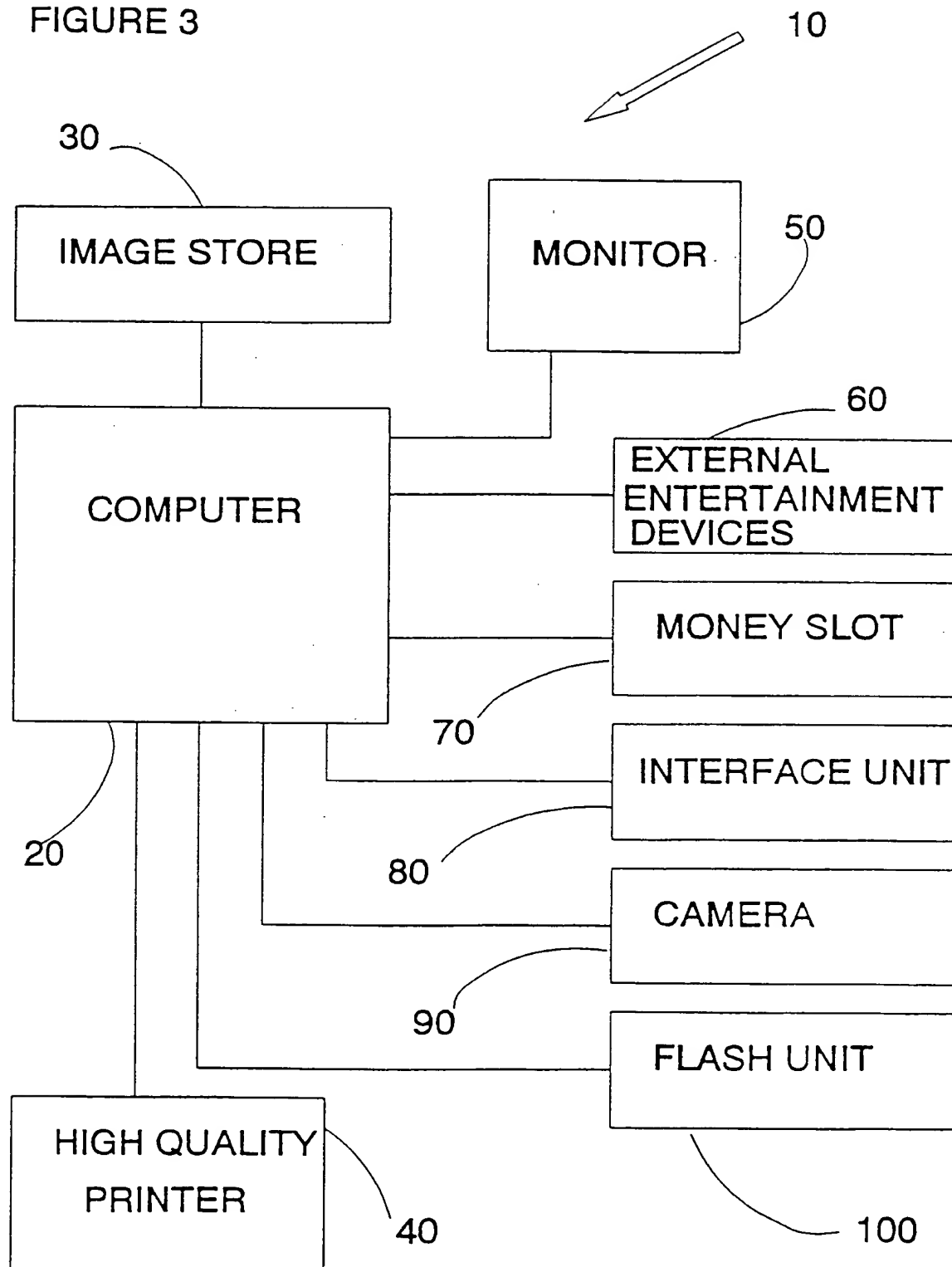


FIGURE 2

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FIGURE 3



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